IST 659 Lab 1

Data modeling I using Visio and Access

1. Problem description

For this lab, you need to use Visio to create an ERD that models the "Shopping site database. You will then use MS Access to build corresponding tables, establish their relationships, and add sample data.

We assume that this database retains profile information about products, vendors, customers, purchases, and their relationships. To model this database, we have identified four entities:

(1) The Product entity contains data about all the products that are offered at this shopping site. This entity shall store at least the following information:

i. Product ID

ii. Product Name

iii. Product Price

iv. Vendor ID

(2) The Vendor entity stores data about vendors that supply products for sale at the shopping site. This entity shall store at least the following information:

i. Vendor ID

ii. Vendor Name

iii. Vendor Address

iv. Vendor Phone Number

(3) The Customer entity stores data about the customers of the shopping site. The Customer entity shall store at least the following information:

i. Customer ID

ii. Customer Name

iii. Customer Address

(4) The Purchase entity contains data about all the purchases made at this shopping site. Each purchase consists of one or more units of the same product. This entity shall store at least the following information:

i. Purchase ID

ii. Product ID

iii. Number of products

iv. Customer ID

v. Total Price

2. ERD

Use Visio to create an ERD according to the following instructions:

(1) Create the above entities, give appropriate names, and add entity attributes. Make sure these attributes are at an atomic level (meaning no composite and no multi-valued attributes) and use good naming conventions. **(1 pt)**

(2) Set up primary keys for each entity. **(.5 pts)**

(3) Establish the relationships between entities. Give the relationships appropriate names, mark the cardinality, and recognize the associations (foreign keys). **(1 pt)**

(4) Use MS Access to build the tables, establish relationships, and add sample data. Don't worry about other details like datatypes. We will talk about them later. Please attach the following screenshots with your report.

(1) the datasheet view of each table; **(1 pt)**
(2) the data relationship model. **(1 pt)**

3. Question

Currently in this ERD every purchase can only have at most one type of product.
If we want to allow a purchase to have more than one type of product, how would you change this ERD to accommodate this new need? (If possible please provide corrected ERD) **(.5 pts)**

4. Submission instruction

Please submit your report (including the ERD, screenshots, and answers to the questions) in one Word file to BlackBoard. You can copy and paste your Visio ERD directly to MS Word file. Name your file in this format “IST659-Lab1-Lastname-Firstname.doc”. Please also bring a paper copy to class. It’s easier to mark and comment on data models on paper. Make sure to print your names on the paper copy as well.

Why is it a bad idea to attach multiple files, like one .doc file and one .vsd file? Well, it’s part of the Internet etiquette. The more files you attached, the longer it takes to download, organize, and grade them. And your instructor or TA might grade your report using an electronic device that does not have Visio or Access installed. Thank you for following the instructions.

5. Due date

The instructor ausually sets aside a chunk of time to grade the reports. Late submissions would prolong the grading process. To ensure fast feedback, please turn in your report on time. If you cannot finish your homework on time for some reason, please turn in the unfinished work and explain your situation.

Note about grading rubric:

This lab evaluates the student's understanding of some key concepts e.g. entity, attribute, primary key, cardinality of relationship, foreign key constraint.
The grading is based on the point structure above and whether the student has grasped these key concepts.